

REMARKS

Drawing FIG. 1 has been amended to correct a repeated designator. The designator for the HOST MAC has been changed from 112 to 114. A new FIG. 1 is included.

The Specification has been amended as recommended by the Examiner to correct a typographical error. Also, the Specification has been amended to make the Specification conform to new drawing FIG. 1.

Claims 1-12 are pending.

I. REJECTION UNDER 35 U.S.C. § 103(a)

To establish a *prima facie* case of obviousness, the Examiner must meet three basic criteria. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be some reasonable expectation of success. Finally, the prior art reference must teach or suggest all the claim limitations.

The Examiner rejected Claims 1, 3, and 5-8 under 35 U.S.C. § 103(a) as being unpatentable over a U.S. Patent No. 5,999,541 to *Hinchey et al.* (hereafter "*Hinchey*") in view of a U.S. Patent No. 6,335,933 to *Mallory* (hereafter "*Mallory*").

Claim 1 recites a method supporting sleep mode wake up in a home phone line network (HPNA) comprising 4 steps. A HPNA network allows a user to network devices in a home using existing phone lines. While the HPNA standard is based on Ethernet, all of the HPNA protocols are not recognized by an Ethernet controller. One of these protocols is the limited automatic repeat request (LARQ) disclosed in *Mallory*. If an HPNA uses LARQ to improve the reliability of transmissions in noisy network conditions, then the Ethernet feature of allowing an Ethernet controller in the HPNA to be put into a sleep mode and then be remotely awakened will no longer

work. The Ethernet controller is not compatible with the LARQ protocol and will not find the bytes used to remotely wake it from the sleep mode. Claim 1 of the present invention is directed to allowing the LARQ protocol to be used with the HPNA while ~~enabling remote wake-up feature of the Ethernet controller to remain operable.~~ The present invention discloses a method whereby LARQ may be used in an HPNA while retaining the wake-up feature in an Ethernet controller.

Claim 1 of the present invention is directed to the particular problem of supporting Ethernet sleep mode wake up in an HPNA which supports the LARQ protocol and may have an LARQ frame present which renders the Ethernet sleep mode wake up inoperable. The Examiner states that *Hinchey* teaches step 1 of Claim 1 and cites *Hinchey* where a field in a frame is detected. The present invention is not directed to detecting any field, rather, it is directed to detecting the presence of an LARQ frame. *Hinchey* does not teach or suggest that the LARQ field is detected. The Examiner states that *Hinchey* teaches step 2 of Claim 1 and cites *Hinchey* where a header and the corresponding frame check sequence (FCS) in the frame is stripped. The invention of *Hinchey* is directed towards stripping the header that defines a packet as a Token Ring packet and substituting an Ethernet header which makes the packet look like an Ethernet packet while retaining its Token Ring information. One of ordinary skill in the art already knows that a header of a frame may be stripped. However, it is not obvious to one of ordinary skill in the art to strip the LARQ field that is used to make frame transmission more reliable and faster as is recited in Claim 1 of the present invention. It is not enough that the Examiner has found that a header and the FCS may be stripped, the Applicant is not claiming the generally understood art of stripping a header. Rather, the present invention is reciting stripping a non-obvious field used to improve frame transmission to accomplish a non-obvious result; enabling sleep mode wake-up in the presence of LARQ protocol. The Applicant asserts that *Hinchey* does not teach or suggest step 2 of Claim 1. Looked at in isolation, steps 3 and 4 are disclosed in *Hinchey*, however the Applicant is claiming steps 3 and 4 in combination with steps 1 and 2. *Hinchey* does not teach or suggest

all of the steps in Claim 1 as is required for an obvious rejection. It is not enough to find steps in isolation; the Examiner must find references that singly or in combination teach all of the steps of Claim 1. *Malloy* only teaches the LARQ protocol and does not teach the step of stripping the LARQ header. The Examiner states that it would have been obvious to one of ordinary skill in the art to have a stripped field be an LARQ field in order to convert an Ethernet frame into an LARQ Ethernet frame and visa versa. However, the Applicant would like to remind the Examiner that there is not such a thing as an LARQ Ethernet frame. Therefore, the Applicant asserts that neither *Hinchey* nor *Malloy*, singly or in combination, teach or suggest all of the steps of Claim 1. Therefore, the Applicant respectfully asserts that the rejection of Claim 1 under 35 U.S.C. § 103(a) as being unpatentable over *Hinchey* in view of *Malloy* is traversed for the above stated reasons.

The Examiner has rejected Claim 5 for the same reasons as Claim 1. Claim 5 is directed to a home phone line controller that implements the steps of Claim 1. Therefore, the Applicant respectfully asserts that the rejection of Claim 5 under 35 U.S.C. § 103(a) as being unpatentable over *Hinchey* in view of *Malloy* is traversed for the same reasons as Claim 1.

Claim 3 is dependent from Claim 1 and contains all the limitations of Claim 1 and recites the limitation that the frame generated in accordance with the steps of Claim 1 is sent to an Ethernet controller. The Examiner states that *Hinchey* in view of *Malloy* teaches the invention of Claim 3. The Applicant has shown that nowhere does *Hinchey* or *Malloy*, either singly or in combination, teach or suggest the particular stripped frame of Claim 1. Therefore, the Applicant asserts that neither *Hinchey* or *Malloy*, singly or in combination, can teach or suggest sending the particular stripped frame to the Ethernet controller. Therefore, the Applicant respectfully asserts that the rejection of Claim 3 under 35 U.S.C. § 103(a) as being unpatentable over *Hinchey* in view of *Malloy* is traversed for the reasons stated above.

Claim 6 is dependent from Claim 5 and contains all the limitations of Claim 5. Claim 6 adds the limitation of an asserted first signal to the first logic block indicates that the LARQ header is enabled and must be stripped from the frame. The Examiner states that *Hinchey* in view of *Malloy* implicitly discloses that the first logic block asserts a first signal to the first logic block that indicates that the LARQ header is enabled and must be stripped from the frame. The Examiner states that the first logic block is needed to indicate that a packet translation is needed. The invention of Claim 6 does not perform a packet translation as disclosed *Hinchey*. The Applicant has shown that it is not obvious to strip the LARQ from a field of a frame wherein the LARQ was added to improve reliability and speed. The present invention recites an apparatus for enabling sleep mode wake-up that has been disabled for an Ethernet controller with the addition of bytes added to improve reliability and speed since the Ethernet controller no longer is able to correctly find the bytes enabling sleep mode wake-up. The Applicant has shown that neither *Hinchey* nor *Malloy*, singly or in combination, teach or suggest stripping the LARQ header to re-enable sleep mode wake-up. Therefore, neither *Hinchey* nor *Malloy*, singly or in combination, teach or suggest asserting a first signal to a logic block indicating the LARQ header was enabled and must be stripped from the frame. Claim 5 is reciting a home phone line controller that has features that recover the ability to use sleep mode wake-up wherein sleep mode wake-up has been disabled for an Ethernet controller. It is important that the Examiner understand that the invention of Claim 5 is directed to a specific home phone line controller and Claim 6 is adding a further limitation to the controller of Claim 5. Therefore, the Applicant respectfully asserts that the rejection of Claim 6 under 35 U.S.C. § 103(a) as being unpatentable over *Hinchey* in view of *Malloy* is traversed for the same reasons as Claim 5 and for the reasons stated above.

Claim 7 is dependent from Claim 5 and contains all the limitations of Claim 5. Claim 7 adds the limitation of asserting second and third signals to the second logic block to further complete operations necessary for the home phone line controller to re-enable sleep mode wake-up by stripping the LARQ header. The Applicant ha

shown that neither *Hinchey* nor *Malloy*, singly or in combination, teach or suggest stripping the LARQ header to re-enable sleep mode wake-up. Therefore, neither *Hinchey* nor *Malloy*, singly or in combination, teach or suggest asserting second and third signals to a logic block, wherein the second signal indicates that the frame check sequence (FCS) corresponding to the frame with LARQ is to be also stripped from the frame and the third signal indicates that the LARQ header is to be stripped from the same frame. Therefore, the Applicant respectfully asserts that the rejection of Claim 7 under 35 U.S.C. § 103(a) as being unpatentable over *Hinchey* in view of *Malloy* is traversed for the same reasons as Claim 5 and for the reasons stated above.

Claim 8 is dependent from Claim 5 and contains all the limitations of Claim 5. Claim 8 adds the limitation of asserting a fourth signal to the third logic block to further complete operations necessary for the home phone line controller to re-enable sleep mode wake-up by recalculating the FCS of the frame stripped of the LARQ header. The Applicant has shown that neither *Hinchey* nor *Malloy*, singly or in combination, teach or suggest stripping the LARQ header to re-enable sleep mode wake-up. Therefore, neither *Hinchey* nor *Malloy*, singly or in combination, teach or suggest asserting the fourth signal to a logic block, wherein the fourth signal enables recalculation of the FCS corresponding to the frame with LARQ that has been stripped to re-enable sleep mode wake-up. Therefore, the Applicant respectfully asserts that the rejection of Claim 8 under 35 U.S.C. § 103(a) as being unpatentable over *Hinchey* in view of *Malloy* is traversed for the same reasons as Claim 5 and for the reasons stated above.

The Examiner rejected Claims 2 under 35 U.S.C. § 103(a) as being unpatentable over *Hinchey* in view *Mallory*, and further in view of U.S. Patent 5,251,205 to *Callon et al.* (hereafter "*Callon*"). *Callon* discloses the LARQ protocol.

Claim 2 is dependent from Claim 1 and contains all the limitations of Claim 1. Claim 2 adds the limitation that step 2 of Claim 1, wherein the LARQ header and the FCS are stripped in the frame containing the bytes enabling sleep mode wake-up,

further comprises placing information in the LARQ header (stripped in step 2) in a frame status-frame which follows the stripped frame. The Applicant has shown relative to Claim 1, that neither *Hinchey* nor *Malloy* teach or suggest the invention of Claim 1. The Examiner has stated that *Hinchey* in view of *Malloy* does not disclose the invention of Claim 2. The Examiner states that *Hinchey* in view of *Malloy* discloses placing the stripped information within a designated portion of the frame and cites *Hinchey*, column 4, lines 5-34. *Hinchey* in this recitation is describing what bits are stripped from a Token ring frame and what bits are put back and where they are put back so that the Token ring frame "appears" as if it is an Ethernet frame. *Hinchey* does not take information from one frame and place it in another frame. *Hinchey* does not discuss LARQ as LARQ had not been invented when *Hinchey* issued. *Hinchey* would have had no knowledge of the affect of adding the LARQ bytes to an Ethernet frame, therefore, no one of ordinary skill in the art would look to *Hinchey* to provide any information concerning a method of re-enabling sleep mode wake-up disabled by the addition of LARQ bytes in a frame. The Examiner then states that *Callon* teaches that packets are fragmented if a packet is larger than the MTU of a link. *Callon* is stating a simple fact that if a data packet is larger than is allowed by the MTU of the link, then the data packet is partitioned into two or more packets so that the data packet is not larger than the MTU of the link. These are protocols, and *Callon* refers to two IP and 8473, wherein the protocol of IP concerning packets larger than the MTU is called "fragmentation" and the same protocol of 8473 is called "segmentation." The Applicant is not claiming either of these protocols. Claim 1 of the present invention recites a method of re-enabling sleep mode wake-up which has been disabled to an Ethernet controller by the addition of LARQ bytes added to improve reliability and speed. Using the method of Claim 1, an added LARQ header is stripped from the frame containing the bytes enabling sleep mode wake-up. The LARQ header is detected, the LARQ header and the corresponding FCS of the frame are stripped, and the FCS is recalculated and added back to the frame. The invention of Claim 1 is not taught or suggested by *Hinchey* in view of *Malloy*. The LARQ protocol was not invented at the time of the invention of

*Hinchey*. By removing the LARQ header from the frame, Claim 1 removes any actions the bytes of the LARQ header would generate. Therefore, by removing the LARQ header from a frame containing the bytes enabling sleep mode wake-up, one protocol is removed and another is re-enabled. Claim 2 adds the information in LARQ header into a frame status frame following the frame stripped of the LARQ header. The frame status frame is a special frame that contains information used by other following processes. In this manner, the functionality of the LARQ protocol lost by the action of stripping the LARQ header from the frame with the sleep mode wake-up bytes is restored for following processes.

*Callon* discloses the LARQ protocol for the first time; it is the invention of *Callon*. *Callon* does not disclose that his LARQ protocol may cause sleep mode wake-up to be disabled for an Ethernet controller receiving frames with bytes enabling LARQ. Therefore, no one of ordinary skill in the art would look to *Callon* to teach or suggest that the information lost by stripping the LARQ header from a frame could be added to a frame status frame following the frame stripped of the LARQ header. *Callon* is concerned with the benefits of the LARQ protocol. Therefore, the Applicant asserts that *Hinchey* in view of *Malloy* and further in view of *Callon* does not teach or suggest the limitation of Claim 2 of the present invention. Therefore, the Applicant respectfully asserts that the rejection of Claim 2 under 35 U.S.C. § 103(a) as being unpatentable over *Hinchey* in view of *Malloy* and further in view of *Callon* is traversed for the same reasons as Claim 1 and for the reasons stated above.

The Examiner rejected Claims 4 and 9-12 under 35 U.S.C. § 103(a) as being unpatentable over *Hinchey* in view of *Mallory*, and further in view of WO 96/13106 to *Gibson et al.* (hereafter "*Gibson*"). *Gibson* is an invention directed to a remote wake-up method for a local area network (LAN).

Claim 4 is dependent from Claim 3 and contains all the limitations of Claim 3. Claim 3 is dependent from Claim 1 and adds the limitation that the frame containing sleep mode wake-up bytes that has been stripped of its LARQ header is sent to an

Ethernet controller. After an LARQ header is stripped from a frame using the method of Claim 1, it is not distinguishable from a frame that never had an LARQ header in the first place relative to the bytes enabling sleep mode wake-up. For a prior art reference(s) to read on the invention of Claim 4, the reference(s) must singly or in combination teach or suggest all of the steps of Claim 3 and Claim 1. The Applicant has shown that none of the references cited by the Examiner teach all of the steps of Claim 1. *Hinchey* in view of *Malloy* and further in view of *Gibson* do not teach or suggest the invention of Claim 4 which includes all the steps of Claims 1 and 3. *Gibson* adds nothing regarding Claims 1 and 3. *Gibson* only describes a wake-up data sequence in a frame. The present invention does not claim a wake-up data sequence in a frame. The present invention is directed to a method of re-enabling sleep mode wake-up (enabled by a wake-up data sequence) that has been disabled by the addition of LARQ header bytes. The invention of *Gibson* is directed to the wake-up data sequence itself that the present invention is utilizing. *Gibson* is disclosing the very sleep mode wake-up data that the method of Claim 1 and this Claim 4 re-enabling by stripping the LARQ header. While *Gibson* naturally discloses comparing the wake-up data in a frame employing remote sleep mode wake-up, *Gibson* does not disclose doing so in a frame stripped of the LARQ header. Therefore, the Applicant asserts that the rejection of Claim 4 under 35 U.S.C. § 103(a) as being unpatentable over *Hinchey* in view of *Malloy* and further in view of *Gibson* is traversed for the same reasons as Claim 3, Claim 1 and for the reasons stated above.

Claim 9 is directed to a system comprising an Ethernet controller in a sleep mode and the home phone line controller disclosed in Claim 5. The Applicant has shown that neither *Hinchey* nor *Malloy* teach or suggest a home phone line controller comprising a second logic block for stripping the LARQ header and a frame check sequence (FCS) from a frame. The invention of *Hinchey* is directed to modifying Token ring frames so that they are compatible with a link designed to handle Ethernet frames. The invention of *Malloy* is directed to the LARQ protocol itself and does not discuss the need for stripping an LARQ protocol header added to a frame to increase



reliability and speed. Since the problem addressed by the present invention is not discussed in either *Hinchey* or *Malloy*, there is no motivation or suggestion of how one of ordinary skill in the art could combine *Hinchey* and *Malloy* to arrive at the invention of Claim 5. The invention of *Gibson* is directed to providing a wake-up data sequence for an Ethernet controller. In Claim 9, the Applicant recites a system with such an Ethernet controller in conjunction with a home phone line controller that has features that re-enable sleep mode wake-up in the Ethernet controller disabled by the addition of LARQ in a frame with the wake-up data sequence. While the Applicant agrees that *Gibson* does disclose an Ethernet controller in a sleep mode, *Gibson* adds nothing regarding the home phone line controller of Claim 9 and Claim 5. Therefore, the Applicant asserts that the rejection of Claim 9 under 35 U.S.C. § 103(a) as being unpatentable over *Hinchey* in view of *Malloy* and further in view of *Gibson* is traversed for the same reasons as Claim 5, Claim 1 and for the reasons stated above.

Claims 10, 11, and 12 are dependent from Claim 9 and contain all the limitations of Claim 9. Claim 9 is a system claim adding an Ethernet controller in a sleep mode to the home phone line network controller of Claim 5. Claims 10, 11, and 12 add the same limitations to Claim 9 as Claims 6, 7, and 8 add to Claim 5. The Applicant has shown that neither *Hinchey* nor *Malloy*, singly or in combination, teach or suggest the limitations of Claims 6, 7, and 8. Therefore, the Applicant asserts that neither *Hinchey* nor *Malloy*, singly or in combination, teach or suggest the limitations of Claims 10, 11, and 12 with respect to Claim 9. *Gibson* discloses a system and method of remote wake-up and only adds the admitted element and Ethernet controller in a sleep mode. *Gibson* adds nothing regarding stripping an LARQ header from a frame that contains sleep mode wake-up data. The LARQ protocol was not invented when *Gibson* disclosed his invention. One of ordinary skill in the art would not arrive at the invention of Claim 9 by the combination of *Hinchey*, *Malloy* and *Gibson*.

Claim 10 is dependent from Claim 9 and contains all the limitations of Claim 9. Claim 10 adds the limitation of an asserted first signal to the first logic block indicates that the LARQ header is enabled and must be stripped from the frame. The Examiner states that *Hinchey* in view of *Malloy* implicitly discloses that the first logic block asserts a first signal to the first logic block that indicates that the LARQ header is enabled and must be stripped from the frame. The Examiner states that the first logic block is needed to indicate that a packet translation is needed. The invention of Claim 10 does not perform a packet translation as disclosed by *Hinchey*. The Applicant has shown that it is not obvious to strip the LARQ from a field of a frame wherein the LARQ was added to improve reliability and speed. The present invention recites an apparatus for enabling sleep mode wake-up that has been disabled for an Ethernet controller with the addition of bytes added to improve reliability and speed since the Ethernet controller no longer is able to correctly find the bytes enabling sleep mode wake-up. The Applicant has shown that neither *Hinchey* nor *Malloy*, singly or in combination, teach or suggest stripping the LARQ header to re-enable sleep mode wake-up. Therefore, neither *Hinchey* nor *Malloy*, singly or in combination, teach or suggest asserting a first signal to a logic block indicating the LARQ header was enabled and must be stripped from the frame. Claim 9 is reciting a home phone line controller that has features that recover the ability to use sleep mode wake-up wherein sleep mode wake-up has been disabled for an Ethernet controller. It is important that the Examiner understand that the invention of Claim 9 is directed to a specific home phone line controller and Claim 6 is adding a further limitation to the controller of Claim 9. Therefore, the Applicant respectfully asserts that the rejection of Claim 10 under 35 U.S.C. § 103(a) as being unpatentable over *Hinchey* in view of *Malloy* and further in view of *Gibson* is traversed for the same reasons as Claim 9 and for the reasons stated above.

Claim 11 is dependent from Claim 9 and contains all the limitations of Claim 9. Claim 11 adds the limitation of asserting second and third signals to the second logic block to further complete operations necessary for the home phone line

controller to re-enable sleep mode wake-up by stripping the LARQ header. The Applicant has shown that neither *Hinchey* nor *Malloy*, singly or in combination, teach or suggest stripping the LARQ header to re-enable sleep mode wake-up. Therefore, neither *Hinchey* nor *Malloy*, singly or in combination, teach or suggest asserting second and third signals to a logic block, wherein the second signal indicates that the frame check sequence (FCS) corresponding to the frame with LARQ is to be also stripped from the frame and the third signal indicates that the LARQ header is to be stripped from the same frame. Therefore, the Applicant respectfully asserts that the rejection of Claim 11 under 35 U.S.C. § 103(a) as being unpatentable over *Hinchey* in view of *Malloy* and further in view of *Gibson* is traversed for the same reasons as Claim 9 and for the reasons stated above.

Claim 12 is dependent from Claim 9 and contains all the limitations of Claim 12. Claim 12 adds the limitation of asserting a fourth signal to the third logic block to further complete operations necessary for the home phone line controller to re-enable sleep mode wake-up by recalculating the FCS of the frame stripped of the LARQ header. The Applicant has shown that neither *Hinchey* nor *Malloy*, singly or in combination, teach or suggest stripping the LARQ header to re-enable sleep mode wake-up. Therefore, neither *Hinchey* nor *Malloy*, singly or in combination, teach or suggest asserting the fourth signal to a logic block, wherein the fourth signal enables recalculation of the FCS corresponding to the frame with LARQ that has been stripped to re-enable sleep mode wake-up. Therefore, the Applicant respectfully asserts that the rejection of Claim 12 under 35 U.S.C. § 103(a) as being unpatentable over *Hinchey* in view of *Malloy* and further in view of *Gibson* is traversed for the same reasons as Claim 9 and for the reasons stated above.

II. CONCLUSION

The rejections of Claims 1, 3, and 5-8 under 35 U.S.C. § 103(a) as being disclosed by *Hinchey* in view of *Malloy* are traversed.

The rejection of Claim 2 under 35 U.S.C. § 103(a) as being disclosed by *Hinchey* in view of *Malloy* and further in view of *Callon* are traversed.

The rejections of Claims 4 and 9-12 under 35 U.S.C. § 103(a) as being disclosed by *Hinchey* in view of *Malloy* and further in view of *Gibson* are traversed

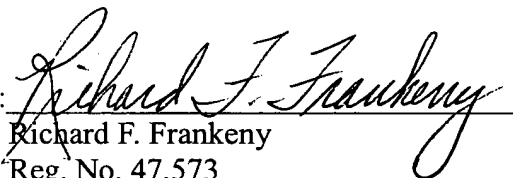
The Applicant, therefore, respectfully asserts that Claims 1-12 are now in condition for allowance and requests an early allowance of these claims.

Applicant respectfully requests that the Examiner call Applicant's attorney at the below listed number if the Examiner believes that such a discussion would be helpful in resolving any remaining problems.

Respectfully submitted,

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Attachment